

REMARKS

Claims 1-10 are pending in this application.

Rejection of Claims 1-3 and 6-8 under 35 USC § 102(b)

Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (U.S. Patent No. 5,566,208) in view of Yonemitsu et al. (U.S. Patent No. 6,061,404).

The present claimed invention recites a method and apparatus for bit rate control in a video or audio encoder having an encoded-data buffer. A first control signal representing the current filling level of the encoded-data buffer is used to control the video or audio encoder output bit rate by corresponding adaptation of at least one encoding parameter used in the video or audio encoder. The encoded video or audio data is then passed through the encoded-data buffer and through a downstream input buffer of a data recorder for storage on a storage medium operated in the data recorder. The encoded video or audio data, after passing through the encoded-data buffer, passes through the input buffer together with data from at least one other encoded data stream before being recorded on the storage medium, thereby controlling the at least one encoding parameter additionally by a second control signal representing the current filling level of the input buffer of the data recorder in order to avoid overflow and underflow of the input buffer. Independent claims 1 and 6 each include limitations similar to those discussed above.

Balakrishnan neither discloses nor suggests “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as in the present claimed invention. Furthermore, Balakrishnan neither discloses nor suggests that the video or audio data “pass through said input buffer together with data from at least one other encoded data stream” as disclosed in the present claimed invention.

Balakrishnan discloses an encoder buffer in a video transmission system having an effective (or logical) size which varies with the transmission bit-rate. A minimum fill level is maintained in the encoder buffer whenever the transmission rate is too high to ensure that the decoder buffer will not overflow or underflow. The encoding rate is varied so as to maintain a fill level in the encoder buffer within limits. In regards to claims 1 and 6, the Examiner contends that Balakrishnan teaches the method and apparatus for bit rate control in a video or audio encoder having an encoded-data buffer. The Examiner contends that Box 54 of Balakrishnan represents an input buffer. Applicant respectfully disagrees. Box 54 actually depicts a communication network which contains a mux, demux, switch and a rate controller. Box 54 is utilized to request a transmission rate change for encoder 48. Balakrishnan neither discloses nor suggests “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as in the present claimed invention. Furthermore, Balakrishnan neither discloses nor suggests that the video or audio data “pass through said input buffer together with data from at least one other encoded data stream” as disclosed in the present claimed invention. Multiplexer 24 from Figure 3 of Balakrishnan does not combine the encoded video data from buffer 20 with at least one other encoded data stream. Although controller 52 controls multiplexer 24, it does not add another encoded data stream. Furthermore, controller 52 does not control encoder 48 by filling level of an input buffer. Controller 52 merely sets a desire data rate.

Yonemitsu et al., similarly to Balakrishnan, neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in the present claimed invention. Yonemitsu et al. discloses an apparatus and a method of encoding a digital signal with which a transmission buffer does not overflow even if recording of a signal on a recording medium is temporarily inhibited due to an external shock, or if the transmission of a signal by broadcast or communication is temporarily inhibited because of an unsatisfactory state of communication.

It is contended in the Office Action that Yonemitsu et al. disclose the transmission of the encoded video to an optical disk, which is an alternative to broadcast or communication. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the decoder of Balakrishnan with the optical disk of Yonemitsu et al. since the optical disk is an alternative to broadcasting. However, as mentioned above, Yonemitsu et al., similarly to Balakrishnan, neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in the present claimed invention.

Although the combination of Balakrishnan and Yonemitsu et al. would create a digital signal encoder having an automatically varying buffer sizes depending on channel bit rate, this combination would not produce an encoder having an encoded-data buffer for “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as in the present claimed invention. Additionally, this combination neither discloses nor suggests that the video or audio data “pass through said input buffer together with data from at least one other encoded data stream” as in the present claimed invention.

In view of the above remarks, applicant respectfully submits that there is no 35 USC 112 enabling disclosure present in either Balakrishnan or Yonemitsu et al., when taken alone or in combination with one another, that would make the present claimed invention unpatentable.

As claims 2-4 and 7-9 are dependent on independent claims 1 and 6, respectfully, Applicant respectfully submits that claims 2-3 and 7-8 are patentable for the same reasons as discussed above regarding claims 1 and 6. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Rejection of Claims 3 and 8 under 35 USC § 103(a)

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (U.S. Patent No. 5,566,208) and Yonemitsu et al. (U.S. Patent No. 6,061,404) as applied to claims 1 and 6 above, and further in view of Fukushima et al. (U.S. Patent 6,584,272).

Fukushima et al., similarly to Balakrishnan and Yonemitsu et al., neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as in the present claimed invention. Fukushima et al. discloses a data recording apparatus capable of recording data while varying the amount of data per unit of time. The apparatus indicates an allowable recording time period on a disc’s operational information according to user-specified setup conditions and the remaining capacity of the disc when a user determines conditions for record programming. The Examiner asserts that Fukushima et al. discloses the recording of MPEG-2 onto DVD-RAM as prior art and that it would have been obvious to one of ordinary skill in the art to use a DVD as DVDs are optical disks. It is further contended in the Office Action that it is well known in the art to record MPEG-2 video onto DVD-RAM as taught by Fukushima et al. However, as mentioned above, Fukushima et al., similarly to Balakrishnan and Yonemitsu et al., neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as in the present claimed invention. Fukushima et al. are only concerned with determining the amount of space remaining on a recording medium and varying the encoding process to fit a desired amount of broadcast video on the disk.

Additionally, there is no reason or motivation to combine Balakrishnan, Yonemitsu et al. and Fukushima et al. Indicating the allowable recording time period on a disc and operational information according to user-specified setup condition, as disclosed in Fukushima et al., has no bearing on varying buffer size of a video and audio encoder, as disclosed in Balakrishnan and Yonemitsu et al. If one were to

combine these three systems, one would create a digital signal encoder having an automatically varying buffer size depending on channel bit rate and an indicator of allowable recording time period on a disc. This combination, however, still does not include “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as in the present claimed invention.

In view of the above remarks, applicant respectfully submits that there is no 35 USC 112 enabling disclosure present in Balakrishnan, Yonemitsu et al. or Fukushima et al., when taken alone or in combination with one another, that would make the present invention as claimed in claim 1 to be unpatentable. As claims 3 and 8 are dependent on independent claims 1 and 6, respectfully, Applicant respectfully submits that claims 3 and 8 are patentable for the same reasons as discussed above regarding claims 1 and 6. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Rejection of Claims 5 and 10 under 35 USC § 103(a)

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (U.S. Patent No. 5,566,208) and Yonemitsu et al. (U.S. Patent No. 6,061,404) as applied to claims 1 and 6 above, and further in view of Fukushima et al. (U.S. Patent 6,584,272), Hamamoto et al. (U.S. Patent 5,661,526), and Lawler et al. (U.S. Patent 5,805,763).

Hamamoto et al., similarly to Balakrishnan, Yonemitsu et al. and Fukushima et al., however, neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in the present claimed invention. Hamamoto et al. disclose a video cassette recorder that selects channels in succession and determines the presence or absence of additional information included in the broadcast signal for the selected channel and stores the selected channel regarded as a reception channel for the additional information when

detecting the presence of the additional information in the broadcast signal. While Hamamoto et al. teaches a recording system that adjusts the recording quality based on the amount of remaining tape, Hamamoto et al., similarly to Balakrishnan, Yonemitsu et al. and Fukushima et al., however, neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in the present claimed invention.

Lawler et al. also neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in amended claim 1 of the present invention. Lawler et al. discloses a program recording system that allows a user of an interactive viewing system to record a preselected program. The interactive viewing system includes at least one program guide that allows user selection of a program for recording. The system sets a record tag that is associated with the selected program and identifies the selected program for recording in response to the user selection. While Lawler et al. utilizes analog or digital video signals in the standard MPEG-2 format containing electronic program guide data in order to control the recording of a program, Lawler et al. also neither disclose nor suggest “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in amended claim 1 of the present invention.

As such, a combination of these five systems would create a digital signal encoder in MPEG-2 format containing electronic program guide data having an automatically varying buffer size depending on channel bit rate and an indicator of allowable recording time period on a disc that allows the encoder to adjust recording quality based on the amount of space remaining. This combination, however, still does not include “passing the encoded video or audio data through said encoded-data buffer and through a downstream input buffer of a data recorder for storage on a medium operated in said data recorder” as disclosed in the present claimed invention.

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In view of the above remarks, applicant respectfully submits that there is no 35 USC 112 enabling disclosure present in Balakrishnan, Yonemitsu et al., Fukushima et al., Hamamoto et al. or Lawler et al., whether taken alone or in combination with one another, that would make the present claimed invention unpatentable. As claims 5 and 10 are dependent on independent claims 1 and 6, respectfully, Applicant respectfully submits that claims 5 and 10 are patentable for the same reasons as discussed above regarding claims 1 and 6. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Having fully addressed the Examiner's rejections, it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's attorney at the phone number below, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,
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